

Control Section

Eradication Using Mass Trapping

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Mass Trapping Overview

Mass trapping is the only behavioral method approved for eradication. Mass trapping is the use of numerous trap in an infested area to lure male moths into the traps and eliminate them. The trapped male moths are eliminated from the breeding population. Other males will be confused by the lure within the trap. The effect is population reduction and/or eradication.

This subsection contains information on (1) the materials needed and (2) the procedure for eradication using mass trapping.

Materials Needed

The following materials and supplies are needed for mass trapping:

- ◆ City, township, or topographic maps (scale 1" = 100-400 ft.) if available on Agricultural Stabilization and Conservation Service (ASCS) aerial photo maps for rural areas (scale 8" = 1 mile)
- ◆ Grid overlay, calipers, or ruler
- ◆ Delta traps (plan at least three traps, but no more than 10 traps per acre)
- ◆ Disparlure
- ◆ Staples and stapler for placing traps
- ◆ Colored pencils for mapping moth finds
- ◆ Small backpack
- ◆ First aid kit
- ◆ Surveyors flagging ribbon
- ◆ Handouts for home owners
- ◆ Trap site description sheet

Procedure for Eradication Using Mass Trapping

Here is an overview of the steps involved in mass trapping.

Step 1—Plot Trap Locations on a Map

Step 2—Select Sites for Placing Traps

Step 3—Set Traps

Step 4—Check the Traps

Step 5—Submit Gypsy Moth Specimens

Step 6—Remove Traps

Step 7—Report Mass Trapping Results

Step 8—Complete Survey Maps

Step 9—Interpret Results

The following section will discuss these steps in detail.

Step 1—Plot Trap Locations on a Map

Determine the infested area. Mass trap at least 400 feet beyond suspected boundaries of the infestations.

Plot trap locations well in advance of the trapping season (in the late winter or early spring).

Very detailed maps are required because some traps will be as close as 66 feet apart. For residential areas, city maps that show lot boundaries on the map (scale 1"=400' or less) will be sufficient. For rural areas, topographic maps and county ASCS aerial photo maps (8"= 1 mile) are good.

The following table shows inter-trap distances for the various trap densities used in mass trapping.

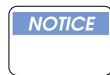
TABLE 20-1: Intertrap Distances for Mass Trapping

Traps per square acre	Intertrap distance in feet
3	120
4	105
5	95
6	87
7	80
8	75
9	70
10	66

Select the trap density you want to use for mass trapping. If you know where the core area of the infestation is, set traps at a higher trap density in the core area.

EXAMPLE: You've delimited a 40 acre gypsy moth infestation and you know from trap data and egg mass survey that the core of the infestation is about 10 acres. You decide to trap the core area at 10 traps per acre and the surrounding 30 acres at 3 traps per acre. Plot one trap every 66 feet in the core area (100 traps) and one trap every 120 feet in the surrounding area (90 traps).

Overlay a uniform grid on a map and mark the grid points based on trap density and the map's scale. You must use a grid to plot trap locations to ensure proper trap distribution.



Do not place traps randomly in the infested area.

Once trap locations are on the map, number the traps. Number each trap location consecutively within the infested area. In the field, each trap must have a number that corresponds to its placement site. Mark the trap location number clearly on the map.

Step 2—Select Sites for Placing Traps

Select individual host trees as close to the plotted map location as possible. Try to place all traps on preferred hosts. If a preferred host is *not* close to the plotted trap site, then choose a less desirable host at that site. It is more important to place the trap near the plotted location than on a preferred host away from the plotted site. Host trees are grouped according to gypsy moth preference and are as follows:

TABLE 20-2: Hosts Preferred by All Larval Instars

◆ Apple	◆ Boxelder	◆ Speckled alder
◆ Aspen	◆ Larch	◆ Sweet gum
◆ Basswood	◆ Linden	◆ Willow
◆ Birch (except yellow and black)	◆ Mountain ash	
	◆ Oaks (all types)	

TABLE 20-3: Hosts of Later Larval Stages

◆ Beech	◆ Chestnut	◆ Pine
◆ Blueberry	◆ Hemlock	◆ Spruce

TABLE 20-4: Hosts Larvae Avoid

◆ Arborvitae	◆ Elder	◆ Locust ¹
◆ Ash	◆ Currant	◆ Maple ¹
◆ Azalea	◆ Grape	◆ Poison ivy
◆ Balsam fir	◆ Holly	◆ Red cedar
◆ Butternut	◆ Honeysuckle	◆ Sycamore
◆ Cedar	◆ Horsechestnut	◆ Tulip poplar
◆ Dogwood	◆ Juniper	◆ Yellow poplar

¹ If host selection is limited, gypsy moth larvae will feed on these trees.

Step 3—Set Traps

The timing for setting traps is critical. Set all traps before male moths emerge. One way to estimate when males will emerge is to check the records for the earliest date that native males have been caught in previous years. Also, follow pest reports (for example, NAPIS Bulletin Board) of recent gypsy moth finds in areas south of your location. Place all traps before the males emerge.

The approximate locations of traps are already marked on a map. Use discretion in selecting the best trap site within an area of no more than half way to surrounding trap sites.

Trap Placement

When placing traps, use the following rules:

1. Place traps 4 to 5 feet high on tree trunks because most gypsy moths fly near ground level. Place traps on trunks rather than branches because traps on trunks catch up to six times more moths than traps on branches. In areas frequented by small children or livestock, place the trap out of their reach.
2. If possible, place traps in shady areas. Do not set the trap where foliage or branches will block the trap openings.
3. Complete trap record sheets. Mark the trap number (from the map) and date on the trap before leaving the site.

The distance between traps depends on the trapping density you select. Whatever the density, place the traps in a uniform array.

Step 4—Check the Traps

After you have set all traps, check them on a regular schedule. For the core area, check at least once a week; for the surrounding area, check at least every 1 to 2 weeks. Check traps more frequently when determining the timing of male emergence (pupae to adult) or when the risk of infestation or vandalism is likely.

Plan your trap checking route before you leave the office. Select a route using an efficient trap run.

When checking traps, have a supply of replacement traps on hand. If you replace a trap, number the replacement trap with the same location number as the original trap and an indicator that the trap is a replacement.



Before assigning personnel to check traps, train the personnel to identify male gypsy moths.

When checking traps, look for the following:

1. Check overall trap condition and replace damaged traps.
2. When a trap contains a suspect moth, note the find on the survey map and field record form. (Each trapper will notify the supervisor according to local policy.)
3. Record the trap inspection by noting the date on the trap and the trap record.
4. Identify each trap with the map plotted trap number.

Check the traps by opening one triangular end. Look into the trap to see if there are any male moths. If the trap is loaded with male moths, remove and replace the trap. Number the replacement trap with the same number as the original trap and an indicator that the trap is a replacement.

Step 5—Submit Gypsy Moth Specimens

Submit the whole trap with the suspect moth to your supervisor or designated identifier for identification. Write the following information for each positive trap:

- ◆ State
- ◆ County
- ◆ Town
- ◆ Trap number
- ◆ Trap tender's name or identification number
- ◆ Date
- ◆ Host plant.

Step 6—Remove Traps

At the end of the trapping season, remove all traps you have set and examine each for male moths. Carefully look for missing traps. If you cannot read the trap number, write the trap number on the trap (so when you examine the trap back at the office, you can locate the find).

When removing the trap, remove all other materials (staples, nails) used in trapping. Also, remove all flagging tape.

Deliver or mail each trap with suspect male moths to the officer/identifier responsible for mass trapping.

Flatten empty used traps and dispose of by burning in an incinerator or by burying at a sanitary landfill.

Step 7—Report Mass Trapping Results

See [Appendix F](#) for instructions on reporting mass trapping data into NAPIS. Do not report into NAPIS until you have all the data collected and summarized by county. NAPIS reports will summarize mass trapping results by county.

Step 8—Complete Survey Maps

Record all positive trap catches on the survey field map. Use the survey maps with positive and negative finds for postseason review and decision making. If necessary, use moth catch patterns for planning egg mass surveys.

At the end of the season, make permanent maps by transferring information from the field maps. Be neat, clear, and accurate when transferring information. It is very important that mass trapping results are correct on the map.

Step 9—Interpret Results

If mass trapping is successful, mass trapping will catch a large percentage of the male gypsy moths. Interpret the results of your trap catches. Multiple catches of gypsy moth in multiple traps will warrant conducting an egg mass survey. Light infestations in excellent habitat or heavy infestations warrant insecticide treatment of the infested area in the next year.

Consider the following factors in interpreting mass trapping:

- ◆ Trap data
- ◆ Data on other life stages
- ◆ Host type and availability
- ◆ Geographical features of the area
- ◆ Professional judgement

Even if the mass trapping effort is *not* successful in eradicating the infestation, the information gathered will provide a much better picture of the area and density of the infestation. Since traps are placed at least every 120 feet (3 traps per acre), moths will most likely travel a short distance before getting into a trap, thereby allowing you to better delimit the infestation.